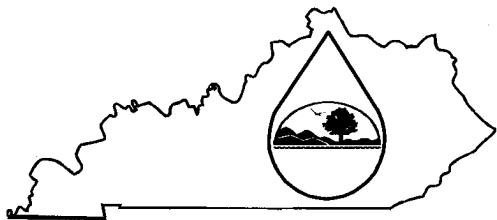


# KPDES FORM HQAA



## Kentucky Pollutant Discharge Elimination System (KPDES)

### High Quality Water Alternative Analysis

The Anti-degradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5, allows an applicant who does not accept the effluent limitations required by sub-paragraphs 2 and 3 of 5:030, Section 1(2)(b), to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist, and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation.

#### I. Permit Information

Facility Name:	Sidney Coal Company, Inc. KDMRE Permit ID. 898-0672 AM #1	KPDES NO.:	KYG045956
Address:	P. O. Box 299	County:	Pike
City, State, Zip Code:	Sidney, KY 41564	Receiving Water Name:	Fraley Branch and Big Creek

**II. Alternatives Analysis** - For each alternative below, discuss what options were considered and state why these options were not considered feasible.

**1. Discharge to other treatment facilities.** Indicate which treatment works have been considered and provide the reasons why discharge to these works is not feasible.

Alternative treatment works have been investigated. It would cost over \$ 653,500 ( 6,500 feet of 24" dia. HDPE pipe at \$ 67/ft. and one lifting station at \$ 218,000 ) to collect and gather the discharge from the five sediment dugouts in this proposal. An in-ground collection reservoir would also be required or an above ground tank. It would also take another \$ 5.7 million to run 24" dia. min. HDPE pipe for 16 miles at \$ 67/ft, plus, over \$ 3.5 million for (16) lifting stations @ one lift station ( 500,000 gpd ) each mile for \$ 218,000 / station, to carry the water discharge to the nearest municipal treatment plant which is the community of Williamson, WV approximately 16 miles away. The Williamson treatment plant would then require a sedimentation basin to remove the silt before even allowing the water to enter their plant.

**2. Use of other discharge locations.** Indicate what other discharge locations have been evaluated, and the reasons why these locations are not feasible.

As an alternative to discharging into Fraley Branch or Big Creek, the applicant examined diverting drainage and runoff into Long Fork (7,900 feet away). This is the nearest adjacent drain to the project area. However, any discharge into this alternative drain would still, ultimately, discharge into the Tug Fork. The alternative stream would not only have their normal flows, but would also receive the diverted flow from proposed operation. As stated above, gathering and collecting the discharges from the five proposed dugouts would cost over \$ 653,500 dollars. In addition to collecting the discharges, it would cost a minimum of \$529,300 (7,900 feet of 24" dia. HDPE pipe at \$ 67/ft.) to pump the discharges into the nearest adjacent tributary.

## **II. Alternatives Analysis - continued**

- 3. Water reuse or recycle.** Provide information about opportunities for water reuse or recycle at this facility. If water reuse or recycle is not a feasible alternative at this facility, please indicate the reasons why.

Water does play a key part in surface mining operations as far as misting/spraying the area to help alleviate airborne coal dust. However, the amount of water required for dust suppression is minimal compared to the discharge generated. Total watershed drainage area for the dugouts is approximately (50) acres with a combined peak discharge of over 18,400 gallons per minute. Water used for dust suppression in a day might be 12,000 gallons. Dust suppression is generally only required during dry times when the flow of the surface discharge is low or non-existent. No other water is need for recycling or reuse with this operation.

A small portion of the total discharge generated will be used for hydro-seeding when grade work is completed on this project but the cost to collect the total volume of the discharge prohibits the use of all the water generated. The cost has been estimated at over \$653,500 dollars to collect this water. Storing this large volume generated would only add to the overall cost.

- 4. Alternative process or treatment options.** Indicate what process or treatment options have been evaluated and provide the reasons they were not considered feasible.

Alternatives reviewed included building an on-site water treatment plant, physical filter barriers, chemical treatment of the discharge, and wetlands construction.

Construction of a small water treatment facility (500,000 gallons per day) on the project site would be over \$ 1.6 million dollars plus an additional cost of approximately \$50,000 for a containment reservoir. The short life of the proposed operation (only five years), and the large amount of water to be treated (18,400 gallons per minute), prohibits the building of an on-site treatment plant.

The construction of silt fences and straw bales will not be able to handle the large discharge flow generated nor will they meet requirements of Commonwealth of Kentucky's Surface Mine Regulations as stated in 405 KAR 16:070.

Chemical treatment of drainage was also considered, but since the primary treatment of the water is removal of sediments, and chemical treatment alone is not effective in sediment removal.

Constructed wetlands have traditionally been used for biological treatment. However the discharge generated by this operation will require sedimentation control measures.

## II. Alternatives Analysis – continued

- 5. On-site or sub-surface disposal options.** Discuss the potential for on-site or subsurface disposal. If these options are not feasible, then please indicate the reasons why.

An alternative to surface discharge from the project area is sub-surface disposal. Deep mining has been conducted in seams in vicinity of the project area. Therefore, the sub-surface disposal of drainage from the project area would present safety concerns for any present deep mining operations, and this option is cost prohibitive due to the need for 2 lift stations (\$436,000), 24" dia. HDPE pipe (\$653,500), and possible drilling (an injection well, depending on depth, could cost up to \$ 50,000 per well to drill), required to inject the discharge underground. Injecting this discharge underground would increase the potential of a blow-out from the outcrop or an old adit and would require a UIC Permit. A suitable place to inject, within a ½ mile of this site, has not been found.

- 6. Evaluation of other alternatives to lowering water quality.** Describe any other alternatives that were evaluated and provide the reasons why these alternatives were not feasible.

Other alternatives reviewed were:

- a) accepting a high water quality requirement, and
- b) avoiding the project.

Accepting high water quality requirements would create additional burden and cost to this project, and in order to do this, larger ponds would have to be built. For the embankment ponds, this means more disturbances in the streams, larger volumes of water stored behind the embankments, and higher construction/removal costs (approximately \$ 15,000 dollars per pond).

Avoiding this project is also not a viable option since the advantages of economic development in the communities of Sidney and South Williamson, KY, in northern Pike county area would not be realized. At a minimum, 50 local jobs would be lost, the tax base would diminish (\$ 438,000 dollars in severance taxes would not be collected), and local businesses would not prosper to the same extent.

### **III. Socio-economic Demonstration**

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

**This area has been previously logged with the discharge from those areas presently flowing untreated into area streams. Sidney Coal Company, Inc. proposes to build 5 on-bench sediment ponds that would treat over 50 acres of the watershed. The area will also be re-graded to prevent erosion from the previous logging activities.**

2. Describe this facility's effect on the employment of the area.

**This mining operation would provide continued employment for an estimated ( 50 ) employees. These mining positions will prove to be higher paying jobs than other industries in Pike county, specifically near small communities of Sidney and South Williamson, KY. The average weekly wage in the mining industry for Pike county is \$ 887.25. This is compared to the average weekly wage for all industries in Pike county of \$ 547.27 ( 2003 U. S. Bureau of Labor Statistics ).**

3. Describe how this facility will increase or avoid the decrease of area employment.

**The economy, in this northern portion of Pike county, is dependent on the mining industry. Therefore, this operation will provide for the continuation of approximately 50 higher wage permanent employees in the area work force. This also positively affects as many as 75 employees in the support industries that will help to supply the material and equipment needed for mining, as well as other services such as engineering, and also the training that will be needed for employees to work in the mines.**

**With the current (April 2007) unemployment rate in Pike County at 5.8%, it is likely that a new mine will lead to an increase in employment, but at the very least, the mine will avoid a decrease in local employment figures.**

4. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

**The surface mine facility will provide continued jobs in northern Pike county, in small communities such as Sidney and South Williamson, KY, and help prevent the loss of jobs when an existing area facility closes or moves to another area. Recovery of the coal, located along Fraley Branch and Big Branch, will produce over 600,000 tons of coal. This will generate over \$ 438,000 dollars in severance taxes, at approximately \$ 0.73 cents/ton, of which Pike county will receive a total of over \$ 65,700 dollars ( 15 percent ). Additional revenue will be given to local businesses generated through increased employment to handle support services catering to the mining operation directly and to the needs of the employees on a daily basis. Local income taxes, property taxes, and sales taxes, will also add to revenue brought in by the mining facility.**

5. Describe any other economic or social benefits to the community.

This facility will not only provide mining jobs but will also provide jobs that help support the mining industry. Equipment sales and repair, mining and engineering consultants, along with fuel and transportation providers, will be needed as a result of the mine. The continuation of as many as 75 jobs in the surrounding communities such as Sidney and South Williamson, KY in Pike county, will spur community development, thus creating even more employment opportunities in the local area.

The increased payments of property taxes will benefit schools so that they have funding to purchase better equipment, improve their facilities, and increased salaries for the teachers. In addition, the increased tax payments will provide additional money for government services to better serve the local area citizens.

These monies will be returned to the community providing funds to help establish alternative industries for additional local employment opportunities, as well as provide for public safety, environmental protection, public transportation, vocational training, local health / recreational / educational facilities, social services, industrial/economic development, workforce training, and the secondary wood industry. Property values increase when land is active. Therefore, when mining is being conducted, the land has an increased value requiring increased property taxes to be paid in to the city operating fund.

**III. Socio-economic Demonstration – continued**

	Yes	No
6. Will this project be likely to change median household income in the county?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Will this project likely change the market value of taxable property in the county?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Will this project increase or decrease revenues in the county?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Will any public buildings be affected by this system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. How many households will be *economically* or *socially* impacted by this project?

It is estimated that ( 50 ) workers will continue to be employed by the project. Thus, ( 50 ) households will be directly affected by the operation. These households will, in turn, affect at least 1.5 times additional households ( 75 ), of local business owners and their employees by purchasing goods and services in the area.

11. How will those households (if any) be *economically* or *socially* impacted?

(For example, through creation of jobs, educational opportunities, or other social or economic benefits)

The households of the estimated ( 50 ) facility employees will be positively impacted by the higher than average income that these mining jobs will provide. The average weekly wage for the mining industry in Pike county is \$ 887.25. The average weekly wage for all industries in Pike county is \$547.27.

Additionally, many other households will be impacted by the increased business for local retailers and their employees in Pike county, engineering services, and fuel/transportation providers, particularly around small communities such as Sidney and South Williamson, KY. The employees of these support businesses will be positively impacted with a more secure place of employment due to the increased revenue given by the mining industry.

	<u>Yes</u>	<u>No</u>
12. Does this project replace any other methods of sewage treatment to existing facilities? If so, describe how. <span style="float: right;"><input type="checkbox"/> <input type="checkbox"/></span>		
<p><b>The proposed project is a surface mining operation. There are no existing sewage waste water discharges that this project could replace.</b></p>		
<u>Yes</u> <u>No</u>		
13. Does this project treat any existing sources of pollution more effectively? If so, describe how. <span style="float: right;"><input checked="" type="checkbox"/> <input type="checkbox"/></span>		
<p><b>The discharges proposed in this application are in areas that have previously been logged. Presently, there are approximately 50 acres of uncontrolled runoff from this area. Any runoff from these drainage areas into area streams will now be treated by the proposed sediment control structures.</b></p>		

<b>III. Socio-Economic Demonstration - continued</b>		
	<u>Yes</u>	<u>No</u>
14. Does this project eliminate any other sources of discharge or pollutants? If so, describe how. <span style="float: right;"><input checked="" type="checkbox"/> <input type="checkbox"/></span>		
<p><b>The Fraley Branch and Big Creek watershed area has been previously logged. With the re-mining proposed in this watershed for this project, sources of existing pollutants will be now be eliminated through reclamation instead of the current uncontrolled runoff into area streams.</b></p>		
15. How will the increase in production levels positively affect the socio-economic condition of the area?		
<p><b>The increase in productivity levels is not only providing jobs for this operation at a higher than average weekly mining wage of \$ 887.25 in Pike county, versus all other industry wages of \$ 547.27 in Pike county, but will create additional revenue for the existing businesses in and around Pike county. The additional revenue of the local businesses and the severance tax dollars for Pike county generated by this project (over \$ 65,700 dollars), will provide the local government increased benefits in public safety (law enforcement, fire protection, ambulance services) and also aid in the industrial and economic development in the surrounding communities such as Sidney and South Williamson, KY in Pike county.</b></p>		
16. How will the increase in operational efficiency positively affect the socio-economic condition of the area?		
<p><b>The facility (a surface mine) will provide continued employment to an estimated ( 50 ) workers during the life of the operation. Also, the project will help to provide as many as 75 additional jobs in other sectors of the economy such as engineering, fuel, and transportation. Thus, the proposed mining operations positively affect the local economy more so than other industries. Using the surface mining method of coal extraction is the most efficient and economical method for this particular site. This method allows for maximum removal of coal reserves increasing the amount of several tax dollars to the state and local economy. Also, surface mining of these mineral reserves will likely employ more people than would an underground mining operation extracting the same mineral boundary.</b></p>		
<b>IV. Certification:</b> I certify, under penalty of law, that this document and all attachments were prepared under my direction or		

**IV. Certification:** I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine & imprisonment for knowing violations.

Name and Title:	Randy L. Tackett / Agent	Telephone No.:	606-353-7201
Signature:	Randy L. Tackett	Date:	6-19-07

Sidney Coal Company, Inc. 898-0672 AM #1 KPDES Form HQAA